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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

RICOH COMPANY, LTD., Plaintiff, vs. AEROFLEX INCORPORATED, et al., Defendants.	**CASE NO. C-03-4669-MJJ (EMC)** **CASE NO. C-03-2289-MJJ (EMC)**
SYNOPSYS, INC., Plaintiff, vs. RICOH COMPANY, LTD., Defendant.	**RICOH'S CLAIM CONSTRUCTION** **REPLY BRIEF** **Date: October 20, 2004** **Time: 2:30 p.m.** **Courtroom: 11**

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<u>Other Authorities</u>:

I.   INTRODUCTION

There is little the parties agree upon. Ricoh's construction is amply supported by the intrinsic evidence, is internally consistent, and does not require judicial gymnastics. The construction of the defendants and Synopsys (collectively, "Defendants") is a result-oriented morass that generally ignores the intrinsic evidence in favor of their extrinsic sources including their expert declaration. This Court has ordered that it will not rely on extrinsic evidence for now; Ricoh understands that the Court will ignore those portions of Defendants' brief, and Ricoh does not address them.

Defendants' brief ("Def. Br.") generally does not set forth their position on the proper interpretation of the claim terms based on the intrinsic evidence, but instead seeks to carve out exclusions to shore up their non-infringement theories. Defendants try to define many of the terms by what they are <u>not</u> or do <u>not</u> cover. Instead of establishing the plain and ordinary meaning of the terms, Defendants identify the portion of the preferred embodiment that best suits their non-infringement positions and assert the details as a mandatory limitation of the claim. Where any discussion was made by the patentee, or the examiner, Defendants conjure up arguments of sweeping disclaimers.

To justify their attempted restrictions, Defendants often tout the fact that no other embodiment is provided in such detail, that one of ordinary skill, as represented by the self-serving Declaration of their paid consultant, Dr. Kowalski, would have so limited the claim terms, or simply the limitation can be found in some other extrinsic source. Defendants ignore clear Federal Circuit law that patents must be "heavily presumed" to have their ordinary meaning, and are to be broadly construed except where manifest exclusion or disclaimer is present. The patentee is presumed to have the full scope of coverage afforded to the ordinary meaning of the claim terms unless "the inventor has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." *Tex. Digital Sys., Inc. v. Telegenix Inc.*, 308 F.3d 1193, 1204 (Fed. Cir. 2002).

II.   DEFENDANTS' "LEGAL PRINCIPLES" MISSTATE THE LAW

The parties agree that issues of patent claim construction are questions of law, to be decided by the Court. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 388 (1996). Beyond that, however, Defendants selectively cite outdated and inapplicable Federal Circuit cases to spin the law in their favor. For example:

A.   The "heavy presumption" of ordinary meaning still exists and applies here

Just a few months ago, the Federal Circuit reaffirmed that there exists a "'heavy presumption' that a claim term carries its ordinary and customary meaning." *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004) (quoting *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002)). Citing a pre-*Markman* case, *A.C. Aukerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 1037 (Fed. Cir. 1992), Defendants argue (at 1-2 & n.1) that this presumptions "vanish[es]." To the extent *Aukerman*'s discussion of presumptions ever related to claim interpretation (since it was discussing the doctrine of laches), it was superceded by *Markman*, and subsequent cases have reconfirmed the "'heavy presumption' that [claims] mean what they say." *Liebel*, 358 F.3d at 913 (quoting *Tex. Digital Sys.*, 308 F.3d at 1202).

B.   The Federal Circuit has rejected Defendants' interpretation of *Biogen* and *Wang*

Defendants interpret *Biogen, Inc. v. Berlex Laboratories, Inc.*, 318 F.3d 1132 (Fed. Cir. 2003), and *Wang Laboratories, Inc. v. America Online, Inc.*, 197 F.3d 1377 (Fed. Cir. 1999), to argue (at 9-10, and later at 28-30) that a flowchart limitation should be grafted onto claim 13, even though that claim does not make reference to a flowchart. Defendants assert that *Biogen* requires limiting claim 13 based upon the prosecution history relating to a completely different claim, arguing that one statement by the examiner compels the drastic step of limiting other claims.[1] Defendants argue that *Wang* requires that, if an applicant describes a single preferred embodiment in a patent specification, it thereby limits the claims to that embodiment by implication. Subsequent Federal Circuit cases have rejected Defendants' urging to interpret *Biogen* to seize upon a singular event in the prosecution history to recharacterize the claims. In *Liebel* (which is conspicuously ignored by Defendants), the Federal Circuit held that "the [*Biogen*] court construed the pertinent claim language restrictively based on an express limiting definition of that language in the specification." 358 F.3d at 907 (citing *Biogen*, 318 F.3d at 1140). Firmly rejecting Synopsis's desired interpretation, *Liebel* held that "it is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a

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[1] The *Biogen* facts do not support this argument. There, the applicant made several explicit disclaimers of subject matter, and the examiner repeatedly stated that the scope of the claims were limited to a "single DNA construct." 318 F.3d at 1137-38. The applicant explicitly endorsed this single construct limitation, and all of the then-allowed claims explicitly included the single construct limitation. *Id.*

1 clear indication in the intrinsic record that the patentee intended the claims to be so limited." *Id.* at 913.

2 Indeed, any "alleged disavowing actions or statements made during prosecution [must] be both clear and

3 unmistakable," including evidence from the specification and from the prosecution history of a patent.

4 *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1326 (Fed. Cir. 2003). *Liebel* also rejected

5 Defendants' arguments regarding *Wang*:

6   *Wang* … does not stand for the proposition that if a patent specification describes only a particular embodiment, the claims must be limited to that subject matter. We have never read *Wang Labs* to

7   stand for so broad a proposition. [358 F.3d at 907.]

8   **C.   Defendants misread *Vitronics* and ignore the Court's ruling on extrinsic evidence**

9   Nowhere do Defendants acknowledge that, in July, this Court, relying on *Vitronics Corp. v.*

10 *Conceptronic, Inc.*, 90 F.3d 1576, 1584-85 (Fed. Cir. 1996), held that it would not rely on extrinsic

11 evidence to construe the claims. Instead, virtually every section of Defendants' brief parrots the

12 declaration of their expert witness and repeatedly cites a large volume of extrinsic evidence. Defendants

13 fail to acknowledge *Vitronics*'s core holding that extrinsic evidence is "unnecessary, <u>and indeed improper,</u>

14 when the disputed terms can be understood from a careful reading of the public record." *Id.* at 1584

15 (emphasis added). Indeed, "intrinsic evidence is the most significant source of the legally operative

16 meaning of disputed claim language." *Liquid Dynamics Corp. v. Vaughan Co.*, 355 F.3d 1361, 1367 (Fed.

17 Cir. 2004).

18   **D.   Exclusion of Defendants' expert testimony is not reversible error**

19   Defendants assert (at 6-7) that failure to consider their expert's testimony may be grounds for

20 reversible error. This remarkable argument is based upon a misreading of *AFG Industries, Inc. v. Cardinal*

21 *IG Co.*, 239 F.3d 1239, 1249 (Fed. Cir. 2001), which identified the trial court's <u>reliance</u> upon extrinsic

22 evidence to improperly alter the meaning of the claim terms as the chief ground for reversal.[2] *AFG* did not

23 change the well-established principle of *Vitronics*:

24   Expert testimony, whether it be of an attorney, a technical expert, or the inventor, on the <u>proper</u> <u>construction</u> of a disputed claim term … may <u>only</u> be relied upon if the patent documents, taken as

25   a whole, are insufficient to enable the court to construe disputed claim terms. <u>Such instances will</u>

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27 _____

[2] Defendants desperately cite *Seymour v. Osborne*, 78 U.S. (11 Wall) 516, 546 (1871), to persuade this Court to rely upon its expert testimony. Ricoh suggests that *Markman* and *Vitronics* are more appropriate

28 standards for the use of expert testimony in claim construction.

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rarely, if ever, occur.… Even in those rare instances, prior art documents and dictionaries, although to a lesser extent, are more objective and reliable guides. Unlike expert testimony, these sources are accessible to the public in advance of litigation. They are to be preferred over opinion testimony, whether by an attorney or artisan in the field of technology to which the patent is directed. Indeed, opinion testimony on claim construction should be treated with the utmost caution, for it is no better than opinion testimony on the meaning of statutory terms." [90 F.3d at 1585 (emphasis added).] [3]

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E.   Dictionaries may be freely consulted

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Defendants' attempt to downplay the importance of dictionary definitions is inconsistent with

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Federal Circuit law. Both parties have cited the same general dictionary – *Webster's Ninth New*

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Collegiate Dictionary (1987) – and Ricoh has cited the well-regarded IEEE dictionary. "[Dictionaries]

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are worthy of special note. Judges are free to consult such resources at any time in order to better

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understand the underlying technology and may also rely on dictionary definitions when construing claim

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terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a

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reading of the patent documents." *Vitronics,* 90 F.3d at 1584.

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III.   ANALYSIS

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A.   Claim 13 Preamble: The Manufacturing Process Involves Both Design and Production

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1.   "computer-aided design process"

Ricoh's opening brief ("Ricoh Br.") showed (at 10-12) that the "manufacturing" process for ASICs

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includes <u>both</u> the design and the production, as indicated throughout the '432 patent specification.

18

Defendants disagree with Ricoh's use of the phrase "during manufacture" in construing the claim term

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"computer-aided design process." Defendants cannot rebut the explicit statement in the '432 patent

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specification that "the present invention, for the first time, opens the possibility for <u>the design and</u>

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<u>production</u> of ASICs by designers." '432 patent at 2:15-30 (emphasis added); *see also* Ricoh Br. at 11 &

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n.6 (collecting similar statements). The undisputed intrinsic evidence shows that the patented ASIC design

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process is intertwined with the production of the ASIC.

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[3] *See also CAE Screenplates, Inc. v. Heinrich Fiedler GmbH & Co.,* 224 F.3d 1308, 1318 (Fed. Cir. 2000) ("In our decision in *Vitronics,* we held that when the intrinsic evidence is unambiguous, it is improper for a court to rely on extrinsic evidence such as expert testimony when construing disputed claim limitations."); *Omega,* 334 F.3d at 1332 ("extrinsic evidence cannot be used to vary the plain language of the patent document").

2.   "ASIC"

An ASIC is an integrated circuit designed to perform a specific purpose. Without citing any intrinsic support, Defendants graft onto the definition of the term "ASIC" their own definition of the term "integrated circuit" (i.e., "an interconnected miniaturized electronic circuit on a single piece of semiconductor material"). JCC Statement, Ex. A, at 2, clause B. There is no valid reason for re-defining the unambiguous definition of the term "ASIC" as given in the '432 patent.

B.   Claim 13 Element [1]: "storing a set of definitions"

Defendants never address Ricoh's proposed construction of claim element [1]. Defendants simply conclude, <u>without analysis</u>, that the "storing a set of definitions" limitations "should be construed consistently and as provided in portions C, D, [and] E . . . in [Defendants'] column of the Joint Claim Construction Chart." Def. Br. at 27. Defendants argue three items to read into claim 13 element [4] ("describing" step) and element [5] ("specifying" step). *Id.* These alleged "requirements," however, are not imposed on claim 13 element [1]. Nor do Defendants ever attempt to support their narrow construction of the phrase "a set of definitions of architecture independent actions and conditions." JCC Statement, Ex. A, at 5, clause E. To the extent that Defendants continue to propose that the "set of definitions" should be construed to be "a set of named descriptions" (*see id.*), Defendants' proposal should be rejected because there is no basis for so narrowing the claim terms. Defendants also do not attempt to justify their narrow construction of the phrase "actions and conditions" (*id.* at 3, clause C).[4] Because the intrinsic evidence clearly support's Ricoh's construction, and Defendants have nothing to the contrary, Ricoh's construction should be adopted.

1.   "Architecture Independent": Defendants' Proposal Would Exclude a Preferred Embodiment of the Patent

Defendants' proposed claim construction contention impermissibly would exclude one (or more) embodiments expressly disclosed in the '432 patent. *See* Def. Br. at 34. In particular, by accepting

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[4] The only portion of Defendants' responsive brief devoted to supporting this clause appears to be Defendants' conclusory statement: "The original application for the '432 patent and the issued '432 patent demonstrate that the 'series of actions and conditions' are the 'sequence of logical operations' necessary to complete the task of the ASIC to be designed and that those logical operations consist of actions (steps) and conditions (decisions)." Def. Br. at 34. This statement is useless in establishing why Defendants' narrow construction should be adopted. Defendants' improper attempt to blur this with their contentions related to the phrase "architecture independent" is also unavailing.

1   Defendants' unsupported contention that <u>all</u> RTL-level inputs fall outside of the scope of the patent,

2   Ricoh's preferred embodiment (Fig. 10), as well as that presented in Fig. 5, would be excluded. The

3   likelihood of such an interpretation being correct is rare indeed. *See, e.g., Vitronics*, 90 F.3d at 1583 (a

4   construction that would <u>exclude</u> a preferred embodiment is "rarely, if ever, correct"). [5]

5   No such "manifest exclusion" or "clear disavowal" of the scope proposed by Defendants is present

6   here. *Sunrace Roots Enter. Co. v. SRAM Corp.*, 336 F.3d 1298, 1306 (Fed. Cir. 2003) ("To be given

7   effect, such a disclaimer must be 'clear and unmistakable.'") (quoting *Omega*, 334 F.3d at 1325). Indeed,

8   "[b]ecause the statements in the prosecution history are subject to multiple reasonable interpretations, they

9   do not constitute a clear and unmistakable departure from the ordinary meaning of the [claim term at

10   issue]." *Golight, Inc. v. Wal-Mart Stores, Inc.*, 355 F.3d 1327, 1332 (Fed. Cir. 2004). On this basis alone,

11   Defendants' proposal should be rejected.

12   Defendants state: "FIG. 10 merely shows a sequence of actions and conditions with specified

13   macros but without register-transfer level description." Def. Br. at 38. This assertion fails to recognize

14   that the embodiment of Fig. 10 (as well as that of Fig. 5) shows an architecture independent input

15   description that consists of: "1) defining the inputs, outputs, and any registers of the proposed ASIC; and,

16   2) describing for a single clock cycle of the ASIC how the ASIC outputs and any registers are set

17   according to the values of the ASIC inputs and the previous values of the registers." JCC Statement, Ex.

18   A, at 4, clause D. This is the very definition Defendants contend (at 35) was excluded from the

19   '432 patent. Fig. 10 of the '432 patent, for example, provides an input description of what is known as a

20   "finite state machine." A finite state machine is a "computational model consisting of a finite number of

21   states and transitions between these states." Oliver 9/20/04 Decl., Ex. 1, *IEEE Standard Dictionary of*

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23   [5] Defendants' position is predicated on their improper attempt to preclude infringement. *See SRI Int'l v.*
     Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1118 (Fed. Cir. 1985) ("A claim is construed in the light of
24   the claim language, the other claims, the prior art, the prosecution history, and the specification, <u>not</u> in
     light of the accused device. . . . It is only <u>after</u> the claims have been construed <u>without reference to the</u>
25   <u>accused device</u> that the claims, as so construed, are applied to the accused device to determine
     infringement."); *Union Oil Co. v. Atl. Richfield Co.*, 208 F.3d 989, 995 (Fed. Cir. 2000) ("'In claim
26   construction the words of the claims are construed <u>independent of the accused product</u>, in light of the
     specification, the prosecution history, and the prior art. . . . [T]he construction of claims is simply a way of
27   elaborating the normally terse claim language[] in order to understand and explain, but not to change, the
     scope of the claims.'" (emphasis added) (alterations in original)) (quoting *Scripps Clinic & Research*
28   *Found. v. Genentech, Inc.*, 927 F.2d 1565, 1580 (Fed. Cir. 1991)).

1 *Electrical and Electronics Terms* 375 (4th ed. 1988) (RCL011415). It presents a series of exclusive states

2 that model signal flow from one state to another, each on a single clock cycle.[6] Because the embodiment

3 of Fig. 10 (and that of Fig. 5) represents an input description that provides inputs, outputs, and designated

4 registers on a single clock cycle basis, adopting Defendants' sweeping exclusion would result in the

5 elimination of two of the primary embodiments of the '432 patent.

6   Although precedent such as *Springs Window Fashions LP v. Novo Industries, L.P.*, 323 F.3d 989

7 (Fed. Cir. 2003), and *Rheox, Inc. v. Entact, Inc.*, 276 F.3d 1319 (Fed. Cir. 2002), may present the rarest of

8 cases where preferred embodiments are excluded from a claim scope, the Federal Circuit contemplates

9 "highly persuasive evidentiary support" before it would permit the sweeping exclusion sought by

10 Defendants here. *Rheox*, 276 F.3d at 1327; *Vitronics*, 90 F.3d at 1583; *see Interactive Gift Express, Inc. v.*

11 *Compuserve, Inc.*, 355 F.3d 1361 (Fed. Cir. 2001) ("[I]t is unlikely that an inventor would define the

12 invention in a way that excluded the preferred embodiment, or that persons of skill in this field would read

13 the specification in such a way.") (quoting *Hoechst Celanese Corp. v. BP Chems. Ltd.*, 78 F.3d 1575, 1581

14 (Fed. Cir. 1996)). No such "highly persuasive evidentiary support" exists.

2.   Functional RTL Is Not Excluded

16   Defendants' proposed construction (at 34-38) of "architecture independent" is not an interpretation,

17 construction or definition, but rather an argument for estoppel, highlighting what the term does not mean

18 instead of what the term should mean. Defendants contend (at 35) that "applicant repeatedly argued that

19 the input specifications of the prior art including [U.S. Patent No. 4,703,435] were not 'architecture

20 independent' simply because their input specifications included register-transfer level [("RTL")]

21 descriptions." Defendants distort the file history. First, Defendants falsely assert that the patentee

22 admitted that the prior art described functional input specifications. *Id.* (citing Ex. 4, April 1989

23 Amendment at 9). Nothing in the citation relied on, however, provides any such admission.

24   Second, and even more egregiously, Defendants make an all-encompassing statement that the

25 patentee had added the term "architecture independent" to exclude all register-transfer level (RTL)-type

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27 [6] Similarly, in Fig. 5, Actions 1 and 2 represent MOV operations that run during a single clock cycle,
   moving values into specified registers A and B, respectively. A comparison of registers A and B is then
28 made on the next clock cycle.

1   descriptions, as defined in the '435 patent, from the claimed invention, selectively quoting the prosecution

2   history. Def. Br. at 20. Defendants intentionally omit the actual point of distinction the patentee was

3   making between its claimed invention and the '435 patent. The patentee stated: "In order for a designer to

4   utilize the ['435 patent] system, he/she must possess a sophisticated understanding of the complexities of

5   the circuit logic itself and therefore have the specialized expert knowledge of a highly skilled VLSI design

6   engineer." April 1989 Amendment at 9. Contrary to Defendants' allegation, the patentee did not disclaim

7   all systems using any type of RTL, but only the input system used in the '435 patent, which required

8   knowledge of skilled VLSI design engineers in order to provide the level of necessary structural detail.

9   The patentee's use of the term "register-transfer level" or "RTL" was merely a shorthand reference used to

10   denote the "structural" RTL-type of input systems prevalent at the time for use in the '435 patent.[7]

11   Indeed, the '435 patent discloses as an input a structural ("technology-oriented") RTL that implies a

12   definite structure, and hence, requires a specialized knowledge of hardware design not needed in other

13   types of RTL (e.g., functional RTL). '435 patent at 5:35-38. Functional RTL offers flexibility and

14   adaptability to the designer by eliminating the need for knowledge of structure. For example, unlike in the

15   '435 patent (and other prior art cited in the file history), functional RTL allows for the use of operators

16   (e.g., multiplication, division, etc.) that do not implicate definite structure by the mere input description.

17   The requirement in the '435 patent of specifying the individual inputs, outputs, and registers for a

18   single clock cycle, together with the fact that the specification can be so easily (and directly) translated into

19   AND/OR logic, indicates that the RTL-level input is a more basic "structural" input. The "structural"

20   RTL-type description utilized in the '435 patent therefore is not "architecture independent."[8]

21   **C.   Claim 13 Element [2] ("storing data describing"): Claim Should Not Be Limited to
        Preferred Embodiment**

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23   As with claim element [1], Defendants do not directly challenge Ricoh's proposed construction.

24   _____

25   [7] To the extent the Court elects to receive extrinsic evidence on this issue, Ricoh is prepared to show that
     the term "RTL" evolved over time from a strictly "structural RTL" to encompass both "structural RTL"

26   and "functional RTL."

     [8] Despite the seemingly technical nature, no extrinsic evidence needs to be taken to resolve this issue.

27   Patentee's statements can be viewed, at the very least, as being subject to multiple reasonable
     interpretations which "do not constitute a clear and unmistakable departure from the ordinary meaning of

28   the [claim term at issue]." *Golight*, 355 F.3d at 1332.

1   Instead, Defendants proffer two additional (unclaimed) "requirements" that they hope will be read into the

2   claim: 1) that there be "at least one hardware cell for each stored definition"; and 2) that each hardware cell

3   be defined in terms of its "functional level, logic level, circuit level, and layout level." JCC Statement, Ex.

4   A, at 6, clause G. In both instances, Defendants point to nothing more than an exemplary embodiment in

5   the '432 patent specification as a basis for imputing the proposed requirements. Defendants thereby

6   advocate a rule that requires importing limitations from an embodiment into a claim, even where the

7   embodiment is not the invention itself. Defendants conspicuously omit any authority that would permit

8   such a radical departure from existing Federal Circuit case law. *Cf. Liebel*, 358 F.3d at 908.

9   Defendants' quest for the limiting requirement of "one hardware cell for each stored definition"

10   also fails on its own flawed logic. Defendants rely for support on a passage of the '432 patent: "For each

11   macro function in the macro library 23 there <u>may be</u> several hardware cells in the cell library . . . ."

12   '432 patent at 5:22-25 (emphasis added). This passage does <u>not</u> state that each macro must be mapped to

13   one (or more) hardware cells – only that more than one cell "may" be mapped to a single macro.

14   Defendants' very rationale for imposing the limitation – that the claim "would be inoperative"

15   without the (unclaimed) restriction (Def. Br. at 39), is fatally undermined by the disclosure in the

16   '432 patent of a specific rule that applies to situations where a stored definition (e.g., macro) is <u>not</u> mapped

17   to any hardware cell: "Rule 2: IF a state exists which has a macro AND this macro has not been mapped

18   to a block THEN find a corresponding macro in the library and generate a block for this macro."

19   '432 patent at 11:51-55. Thus, the claimed invention cannot be construed as "inoperative" for failure to

20   map each stored definition (e.g., macro) to a hardware cell, where a preferred embodiment discloses the

21   procedure for handling that very scenario.

22   Defendants' additional attempt to narrow the claims involves imposing specific details (such as

23   functional, logic, circuit, and layout level information) for each hardware cell stored in a cell library. In

24   support of this narrowing proposal, Defendants refer (at 39) to portions of the '432 patent that discuss the

25   details of an exemplary embodiment. Defendants argue that "such information is essential for matching

26   the specified stored definitions to these hardware cell descriptions and for producing the netlist and mask

27   data for the ASIC." *Id.* The underlying logic of this contention is fatally flawed; each hardware cell need

28   not have all of Defendants' (allegedly required) elements in order to be mapped to a stored definition (e.g.,

1   a macro).

2   **D.   Claim 13, Element [3] ("storing in an expert system knowledge base"): The Claim Does Not Require An Expert System**

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4   Defendants challenge Ricoh's proposed construction of the term "expert system knowledge base."

5   Defendants contend (at 43) that the term "expert system" refers to the use of an expert system for applying

6   rules stored in the claimed "knowledge base." Defendants' reliance on the patentee's statement in a

7   November 1989 Amendment (at 9) accompanying the addition of the term "expert system knowledge

8   base" to application claim 20 only proves Ricoh's point.[9] In that Amendment, the patentee had stated:

9   "Independent claim 20 has been also amended to emphasize the expert system <u>aspects</u> of applicants'

10   method." Ricoh Br. Ex. 5 at RCL000237 (emphasis added). As shown below, this statement does <u>not</u>

11   establish that an "expert system" had become an element of the claim. It merely confirms the patentee's

12   intent to claim certain "aspects" (i.e., the claimed "expert system knowledge base") of an expert system –

13   <u>not</u> an expert system <u>itself</u>.

14   **1.   "expert system": An Expert System Does Not Require Inference Engine**

15   Defendants have no rebuttal for Ricoh's argument that the term "expert system" is grammatically

16   read as an adjective or other <u>modifier</u> for the noun "knowledge base." Nor do Defendants offer any

17   challenge to Ricoh's position (Ricoh Br. at 29) that the rules or knowledge are stored in the "knowledge

18   base," <u>not</u> in a system known as an "expert system." Defendants do not refute that if the patentee had

19   intended to encompass both an "expert system" and a "knowledge base" for the process of patent claim 13,

20   the patentee would have used the same language as was added to patent claim 9. The Court therefore

21   should not construe the term "expert system" as a separate limitation on the overall process of claim 13.

22   Even if the Court must somehow find that the claim term "expert system knowledge base" requires

23   the presence of both an "expert system" and a "knowledge base," nothing in the claim language, the

24   specification, or the prosecution history <u>mandates</u> that the "expert system" contain the specific elements

25   proposed by Defendants (i.e., "working memory" and an "inference engine").[10] Indeed, even in the

26   _____

27   [9] Defendants refer (at 43) to an April 1989 Amendment that allegedly added limitations from application claim 21 to application claim 20, which later became patent claim 13. No such amendment was ever made, however. *See* Ricoh Br. Ex. 5 at RCL000212.

28   [10] Defendants rely on extrinsic evidence (particularly the Kowalski Declaration) in hopes of imputing these

1   technical dictionary on which Defendants rely, the definition of "expert system" does <u>not</u> mandate the use

2   of an inference engine, as proposed by Defendants: "An expert system will generally consist of a <u>rule</u>

3   <u>base</u>, an <u>inference engine</u> and a user interface (which will <u>generally</u> provide an explanation facility)." Def.

4   Br. Ex. 14 at DEF079312-13 (last emphasis added). That an expert system may "generally" use a

5   component such as an inference engine does <u>not</u> dictate that an "inference" engine <u>must</u> be included in the

6   construction. At most, the public record may suggest that an "expert system" be defined as "a rule based

7   automatic logic synthesis component," as stated by the patentee in its April 1989 Amendment (at 9)

8   (RCL000215). Even this definition, however, does <u>not</u> require an "inference engine."

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2.   "a set of rules for selecting hardware cells": Claim Not Limited to "IF-THEN" Format

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11   Defendants argue (at 47) that the '432 patent "defines the 'rules' used by the rule-based expert

12   system of the claimed invention to be IF-THEN rules" (citing extrinsic evidence references). Defendants'

13   Ex. 14 actually supports Ricoh's position that alternative rule "formats" may be used to implement a rule

14   base. For example, in addition to the "IF-THEN" format (i.e., "<u>if P then Q</u>") described at pages 10 and 53

15   of Def. Ex. 14, that reference highlights an alternative format known as "proportional calculus" that uses

16   the format "$P \rightarrow Q$" to represent the antecedent (i.e., "P") and consequent (i.e., "Q") portions. Given their

17   own evidence of knowledge in the art, Defendants have no basis to argue that one of ordinary skill would

18   "unmistakably" view the rules discussed in the '432 patent as being limited to the exemplary IF-THEN

19   format shown.

20   In one of the most confusing arguments in their brief, Defendants argue (at 48) that the plain

21   language of claims 1, 9, and 18 "require[] that the IF-THEN rules stored in the knowledge base of the rule-

22   based expert system embody the expert knowledge for mapping the specified definitions in the flowchart

23   to the hardware cell descriptions." Defendants appear to be arguing that the claimed "rules" must embody

24   more than just expert knowledge of highly skilled VLSI designers. Defendants argue that the "expert

25   knowledge" be specifically directed to "mapping the specified definitions in the flowchart to the hardware

26   cell descriptions." *Id.* Nothing in the language of claims 1, 9, or 18, nor the '432 patent specification

27

28   additional limitations in the claim in a manner inconsistent with the intrinsic evidence.

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1   passage cited by Defendants, refers to "expert knowledge" for "mapping the specified definitions in the

2   flowchart to the hardware cell descriptions," as contended by Defendants. Even if these sources had

3   recited the use of such "expert knowledge," nothing in the language of claim 13 itself (or anything else in

4   the public record) requires such a limitation on the "rules" of claim 13.

> **E.   Claim 13 Element [4] ("describing"): The Claim Is Not Limited to a Flowchart Input Description**

The dispute regarding claim element [4] is solely around Defendants' insistence (at 28) that the

claim element <u>requires</u> that "the designer represents a sequence of logical steps and decisions in a

flowchart format," solely as illustrated in a preferred embodiment of the '432 patent. However, specific

examples and embodiments in the specification should <u>not</u> be read to limit the scope of a claim term.

Tex. Digital Sys., 308 F.3d at 1204; *Teleflex*, 299 F.3d at 1326. Defendants improperly attempt to go even

further than what the Federal Circuit disallowed, as Defendants propose an interpretation that would limit

the claim to just <u>one</u> of the embodiments disclosed in the '432 patent. The fact that the flowchart preferred

embodiment meets a "goal" of the invention does <u>not</u> mean that the invention is limited to (or requires) the

use of a flowchart. *See, e.g., Liebel*, 358 F.3d at 908.

Defendants' attempts to undermine the "list" format embodiment as an "off-hand mention" is

telling. The mere presence of the format in the specification as an alternative input description is

<u>conclusive</u> evidence that the flowchart embodiment is <u>not</u> the invention itself but only one embodiment.

As explained at *supra* pages 2-3, Defendants reliance upon *Biogen* and *Wang* are inapposite, and have

been rejected by *Liebel*. Defendants argue for a <u>new</u> standard even more stringent than any previously

imposed by the Federal Circuit. They argue (at 28) that a claim can only be broader than a disclosed

embodiment if the specification provides a detailed "explanation or any other description" that "supports"

that interpretation, and the mere mention of an alternative embodiment is <u>not</u> sufficient to "support" such

an interpretation. It appears that the only "support" that would satisfy Defendants' standard would be the

disclosure of figures, corresponding descriptions, and exemplary implementations. This is clearly not the

standard. *See, e.g., Liebel*, 358 F.3d at 906 ("this court has expressly rejected the contention that if a

patent describes only a single embodiment, the claims of the patent must be construed as being limited to

that embodiment").

1   Defendants' reliance on the Examiner Interview Summary dated October 19, 1989 (Ricoh Br. Ex. 5

2 at RCL000228) is equally misplaced. First, although the Interview Summary clearly identified the claims

3 discussed during the Interview, it specifically left undefined which claims were subject to any agreement

4 reached. The form indicated that an agreement was reached as to "some or all of the claims." *Id.* The

5 only thing that was evidently "agreed upon" therefore was that the features of a "flowchart editor" and an

6 "expert system" were distinct over the prior art. Thus, any claims that contained those features, or that

7 were amended to include the features, would be understood by both parties to be patentable over the cited

8 prior art.

9   Indeed, in the November 1989 Amendment (at 7) (Ricoh Br. Ex. 5 at RCL000235), the patentee

10 confirmed this understanding by stating:

11   During the interview, the Examiner carefully reconsidered the prior art and applicants' claims,
        and upon reconsideration agreed that certain features as defined in applicants' claims, such as the
12   "flowchart editor" and the "expert system for translating the flowchart into a netlist defining the
        necessary hardware cells of the integrated circuit" patentably distinguish applicants' invention
13   from the prior art of record, including Darringer et al. 4,703,435. Thus, it was agreed that Claim
        18 [patent claim 11] in its <u>present</u> form, for example, patentably defines applicants' invention
14   over the prior art of record.

15 *Id.* (emphasis added). The patentee did not make a similar statement with respect to application claim 20

16 (which became patent claim 13).[11]

17   **F.   Claim 13 Element [5] ("specifying"): Claim Not Limited to Manual Assignment**

18   The dispute over claim element [5] involves Defendants' theory (at 31-32) that the "specifying"

19 step must be performed manually by a user. For support, Defendants point (at 32) to claims 1, 9, and 11,

20 which all specifically claim the manual assignment of a macro. Juxtaposing these claims to claims 13-17,

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22 _____

23 [11] Defendants' final arguments are equally specious. Defendants argue (at 30) that *Biogen* and *Acco
    Brands, Inc. v. Micro Security Devices, Inc.*, 346 F.3d 1075 (Fed. Cir. 2003), "flatly reject[]" Ricoh's
24 argument that claim 13 is broader than other claims that include a flowchart limitation. Unlike in this case,
    Biogen involved a single embodiment that was considered a description of the invention itself, and *Acco*
25 did not include any statements during prosecution that would suggest broader coverage in different claims.
    Biogen, 318 F.3d at 1139; *Acco*, 346 F.3d at 1079. Neither of these circumstances is present here.
26 Defendants also argue (at 31) that the claim term "series" must be limited to a "sequence of logical
    operations" because a <u>sequence</u> of such operations was disclosed in the specification. Nothing in the cited
27 passage ('432 patent at 2:24-27), however, restricts the term "series" to the narrower term "sequence of
    logical operations." *SRI Int'l*, 775 F.2d at 1121 n.14 ("That a specification describes only one embodiment
28 does not require that each claim be limited to that one embodiment."); *see also Tex. Digital Sys.*, 308 F.3d
    at 1204.

1   however, highlights the point that claims 13-17 do <u>not</u> recite or require any user operation.[12]

2   Defendants' contention (at 33) that Ricoh is eliminating an explicit connection between the

3   "describing" and "specifying" steps is unfounded. The "desired function" language remains as a resulting

4   input from the "describing" step. Ricoh does not contend otherwise. Defendants fail to demonstrate how

5   such linkage (i.e., applying the "specifying" step to the output of the "describing" step) could mandate the

6   inclusion of the "manual operation" embodiment into the otherwise silent claim.

7   Defendants contend (at 33) that Ricoh quotes portions of the '432 patent that "actually support

8   Defendants' proposed construction (*See e.g.*, Ex. 1 at 7:24-25)." Like most of Defendants' contentions, this

9   contention is based on a misreading of Ricoh's opening brief. As shown at page 38 of Ricoh's opening

10   brief, Ricoh's quotation included the referenced passage (i.e., '432 patent at 7:24-25), admitting that a

11   "manual" operation was disclosed. That quotation was immediately followed by quotations showing the

12   use of an "automatic" operation (i.e., '432 patent at 9:14-18 and 13:5-7). Defendants conveniently ignore

13   this fact.

14   Defendants further contend (at 33) that "there is no embodiment described in the '432 patent for

15   'automatically mapping.'" Even if this were true, which it is not, such a finding does <u>not</u> mandate a narrow

16   construction of the claims to the "manual mapping" embodiment disclosed. Nevertheless, Defendants'

17   erroneous contention that the passage at column 9, lines 14-18 does not support an "automatic mapping" is

18   wide of the mark. In context, this passage is introduced by the following sentences: "FIG. 9 shows the

19   cell list generation steps. The first step of cell list generation is the transformation of the flowchart

20   description into a structure that can be used by the Cell Selector. . . . Rules of the following type are

21   applied <u>during this stage</u>[:] map arguments to data paths[; and] map actions to macros . . . ." '432 patent at

22   9:8-17 (emphasis added). A plain reading of the passage <u>in context</u> shows that the quoted rules are to be

23   applied "during this stage," which refers to the "first step of cell list generation." The passage does <u>not</u>

24   apply to a statelist in which the "macros" have already been assigned to the desired actions, as contended

25

26   [12] In addressing Ricoh's construction, ironically, Defendants assert (at 33) that "Ricoh's proposed
     construction is contrary to the actual words used in the claim." If Defendants relied on this benchmark for
27   their own proposed construction, there would be virtually no dispute regarding any claim terms in these
     proceedings. The actual words of the claim do <u>not</u> describe the manual operation, nor do the actual words
28   describe a flowchart format, a list format, or any other particular format.

1   by Defendants. Defendants' proposition is fatally flawed, as it is unlikely that a "rule" would be applied to

2   "map actions to macros" if a user had <u>already</u> mapped the macros to the actions during the previous entry

3   of the flowchart.

> **G.   Claim 13 Element [6] ("selecting"): No Particular Means is Required to Perform Process**
>
> **1.   "selecting"**

The dispute regarding claim element [6] stems from Defendants' continued reading of limitations from the specification into the claims. In particular, Defendants argue (at 41) that a function of "mapping the specified definitions to the stored hardware cell descriptions must be performed by a rule-based expert system and not conventional software." Nothing, however, in the claim language dictates <u>any</u> specific means for applying the claimed rules. Nothing identified by Defendants compels a finding that the description is a limitation on the patented invention.

The patentee's public record comments are not inconsistent. The patentee's statements emphasize the use of a rule base (and inherently a system for processing the rules). Because the rules are "expert rules," the system needed to process the rules was conveniently named a "rule-based expert system." Nothing in the prosecution history, however, placed any restrictions on the makeup of such a rule-based expert system. Certainly nothing required the use of an "inference engine" as proposed by Defendants. Indeed, the term "inference engine" is nowhere to be found (nor any place cited by Defendants) in the prosecution history. Instead, the patentee specifically defined what it meant when it used the term "expert system" in conjunction with its claimed rule base. The term "expert system" was indicated to mean "a knowledge base in the form of a rule based automatic logic synthesis component." April 1989 Amendment at 9.

Regarding the Interview Summary Record, as noted above, any "agreement" made between the examiner and the patentee was with respect to "some or all of the claims" discussed. There is no indication, however, whether the alleged agreement applied to patent claims 13-17 nor was there any agreement that mandated amending all of the claims. Given the comments in the subsequent Amendment, where no such amendment was made to claims 13-17, one can only conclude that the agreement did not extend to claims 13-17. Moreover, even if the term "expert system" must be somehow imputed to claims

1 13-17, which it should not, at most, the term should be read consistent with the patentee's previous

2 definition, i.e., the term "expert system" was read to mean "a rule based automatic logic synthesis

3 component." April 1989 Amendment at 9.

4 Defendants' reference (at 43) to the patentee's statement that "[Patent claim 13] has been also

5 amended to emphasize the expert system aspects of applicants' method" (November 1989 Amendment at

6 9) plainly refers to "aspects" of an expert system (i.e., the claimed "expert system knowledge base") and

7 not an expert system itself. At most, the phrase refers to a system that applied expert rules, such as a

8 "knowledge base in the form of a rule based automatic logic synthesis component," which the patentee had

9 defined as an "expert system." At no time did the patentee argue or otherwise contend that an "inference

10 engine" should or must be used to perform the claimed method.[13]

11 Defendants argue (at 44) that "Ricoh's use of the phrase 'through the application of the rules'

12 attempts to eliminate the requirement from the file history that rule-based expert system be used." But

13 there is no requirement in the file history that an "expert system" be used, particularly not one with an

14 "inference engine" as proposed by Defendants. Ricoh's proposed definition of "through the application of

15 the rules" is a direct interpretation of the claimed phrase "said step of selecting a hardware cell comprising

16 applying . . . a set of cell selection rules." *Id.* Unlike Defendants' arguments, Ricoh's construction is

17 squarely based upon the intrinsic evidence – the '432 patent claims, specification and file history.

18 Defendants opine (at 44) that Ricoh is eliminating the phrase "selecting . . . for each of the

19 specified definitions a corresponding integrated circuit hardware cell." Ricoh's proposed construction of

20 this phrase, i.e., "selecting . . . a hardware cell for performing the desired function of the desired ASIC,"

21 captures the meaning of the claimed phrase "selecting . . . for each of the specified definitions a

22 corresponding integrated circuit hardware cell." Ricoh Br. at 40-44. The "desired functions" are clearly

23 representative of the "specified definitions" (e.g., desired functions of the ASIC) claimed. *Id.*

24 Defendants further attempt (at 44-47) to impose on the claims the requirement that an "inference

25 engine" be used to apply the claimed rules as opposed to "conventional algorithmic" software. Defendants

26 try to carve out a scope that excludes "conventional algorithmic" without any reference to such software in

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28 ─────────────────────

[13] As shown by Defendants' own Ex. 14, a knowledge base is only one part of an expert system.

1   the claims, the patent specification, or the file history.[14]   Thus, despite the fact that the plain language of

2   claim 13 does not limit the means or mechanism that may be used to perform the claimed process, without

3   any authority, Defendants would have this Court not only impose a limitation as to what type of means

4   (i.e., an expert system) can be used, but also what type of means cannot be used (i.e., an algorithmic

5   software). Relying solely on extrinsic evidence, Defendants allege (at 44) that "[a] person of ordinary skill

6   in the art in 1988 would have known that the rule-based expert system software approach is substantially

7   different than using conventional algorithmic software." Because such extrinsic evidence should not be

8   relied upon, Defendants' unique proposal should be rejected on this basis alone. It should also be rejected

9   because it fails to give the claims their proper scope based on their plain and ordinary meaning, and

10   restricting the scope in the absence of any manifest exclusion or clear disavowal. *Tex. Digital Sys.*, 308

11   F.3d at 1204.

2.   "generating": a substep of "selecting"

13   Defendants do not, because they cannot, challenge Ricoh's argument that the plain reading of claim

14   13 properly holds the "generating" substep as one in the overall "selecting step." Nor do Defendants

15   challenge the intent of the patentee in amending the "selecting" step to include the "generating substep."

16   The fact that the specification describes one preferred embodiment that Defendants argue suggests

17   the use of a separate "generating" step does not in and of itself permit the post-grant rewriting of the claim

18   proposed by Defendants. Defendants point to no definition or other limitation on the "selecting" step in

19   the specification (or even in the file history) which justifies rewriting the claim in this way. Nor is it

20   relevant that the "generating" substep was once set out as a separate step in a dependent claim. Indeed, the

21   fact that the patentee chose not to maintain the substep as a separate step confirms that the claim is

22   properly construed in its current context without rewriting as proposed by Defendants.

23   Defendants make one of their most extraordinary contentions in proposing that the "generating"

24   substep be construed as "producing a list of the needed hardware cells by eliminating any mapped

25   hardware cells that are redundant or otherwise unnecessary and producing a custom controller type

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28   [14] Defendants transparently hope to avoid infringement claims by having the claims construed to exclude
algorithmic software which they use as part of their commercial systems.

1   hardware cell for providing the needed control for those other hardware cells." JCC Statement, Ex. A, at

2   19, clause Q. A plain reading of the actual claim limitation present in claim 13 bears no relation to the

3   requirements imposed by Defendants. As with so many other purported limitations offered by Defendants,

4   they cannot point to any plain meaning of any term, any express definition from the specification, or even

5   any statements in the prosecution history that provide any justification for the proposed requirements.

6   Defendants simply point to one portion of the '432 patent specification, expecting the Court to ignore the

7   fundamental principles of claim construction that the mere disclosure of an embodiment cannot limit the

8   scope of the patent claims. *See, e.g., Liebel*, 358 F.3d at 908; *Tex. Digital Sys.*, 308 F.3d at 1204. In order

9   to adhere to the Federal Circuit prohibitions against such practice, Defendants' proposed restrictions must

10   be rejected out of hand.

11   The lone portion of the '432 patent specification relied on by Defendants (i.e., 13:59-66) to support

12   their extraordinary supposition describes the application of rules from an expert system knowledge base

13   used to optimize hardware cells that had been initially selected from an input specification. Although the

14   claim clearly reads, as Defendants admit, on a cell selection that results from this optimization operation,

15   nothing in the intrinsic evidence restricts the scope of the claim to that type of cell selection. Instead, the

16   claim reads on a cell selection that is both initially performed from an input specification, as well as the

17   ultimate selection of cells resulting from this optimization operation.

18   This interpretation is apparent from a plain reading of the claim language. It is also apparent from

19   the different embodiments described in the '432 patent. Compare, for example, the optimization selection

20   of column 13, lines 59-66, with the embodiment showing a simple selection at column 2, lines 27-44;[15]

21   and the embodiment of column 10, lines 13-34, showing a further optimization performed after a netlist is

22   generated. The wide spectrum of cell selection embodiments disclosed in the '432 patent specification

23   conclusively rules out any argument that the single embodiment relied on by Defendants would justify the

24   narrow interpretation proposed by Defendants.

25

26   [15] "[T]he system and method of the present invention translates the architecture independent functional
     specifications into an architecture specific structural level definition of an integrated circuit, which can
27   be used directly to produce the ASIC. The structural level definition includes a list of the integrated
     circuit hardware cells needed to achieve the functional specifications. . . . The list of hardware cells and
28   their interconnection requirements may be represented in the form of a netlist." *Id.*

1   Defendants have broadened their interpretation of the "interconnection requirements" to refer to

2   merely "control paths and data paths for the needed hardware cells." Defendants' identification of portions

3   of the specification that detail the generation of control and data paths between selected cells, however,

4   does nothing more than highlight the fact that control and data paths are types of interconnections but are

5   not limitations on the claim term as proposed by Defendants. Defendants' failure to rebut Ricoh's reliance

6   on the passage of column 5, lines 35-40 is reason enough to reject Defendants' proposed construction.

7   Defendants also have failed to provide any valid argument for adding the proposed construction

8   "and producing a custom controller type hardware cell for providing the needed control for those other

9   hardware cells." JCC Statement, Ex. A, at 19, clause Q. Defendants (again) point to the disclosure of the

10   preferred embodiments for support of their attempt to impute details of these embodiments as (unwritten)

11   limitations of the claim. As discussed so often herein, Defendants' underlying "single embodiment" theory

12   is fatally flawed under the circumstances of this case, and thus, Defendants' proposed constructions must

13   be rejected on that basis alone. As nothing in the claim language (or other parts of the public record)

14   identifies or even suggests that a controller is a necessary part of the claimed method, Defendants' proposal

15   must be rejected.

16   **H.   Claim 14 ("generating from the netlist the mask data")**

17   Ricoh's proposed definition (i.e., "mask data which can be directly used by a chip foundry in the

18   fabrication of the ASIC") is virtually verbatim from the '432 patent specification ("produce mask data

19   which can be directly used by a chip foundry in the fabrication of integrated circuits"). '432 patent at 5:40-

20   46. Defendants argue (at 52) that Ricoh's construction is "contrary to how one of skill in the art would

21   understand 'mask data' and also finds no support in the '432 patent or its file history." Defendants provide

22   no intrinsic evidence to support this assertion, and the inappropriate reference to the extrinsic Kowalski

23   Declaration is inconsistent with the intrinsic evidence.

24   **I.   Claim 15 ("generating data paths")**

25   The dispute with respect to claim 15 lies in Defendants' misapprehension regarding the teachings

26   of the '432 patent. Defendants maintain that the claimed "data paths" between hardware cells, as shown,

27   for example, as "lines" in Fig. 1b, represent structural components (i.e., hardware blocks) that manipulate

28   data as the signal flows between selected hardware cells. Def. Br. at 52-53. Ricoh, however, properly

1   construes the "paths" as merely signal lines carrying data between the selected hardware cells. *See*

2   '432 patent at 2:39-40, 3:60-65. One of the most telling portions of the '432 patent specification is column

3   1, lines 60-68. In this passage, the patentee identifies the "lines" interconnecting the hardware cells (in the

4   form of blocks) for carrying data or control. *Id.* At lines 65-68, in particular, the patentee specifies that

5   the blocks represent hardware components. No such description is made of the "lines" carrying the data

6   between blocks. Had the patentee intended the signal lines to be structure or hardware components, the

7   patentee would have referenced the type of structural components used.

8   **J.   Claim 16 ("generating data paths comprises applying")**

9   Defendants rely (at 53) on the same ill-conceived arguments related to the "inference engine" and

10 "conventional algorithmic software" requirements Defendants hope to impose on a "rule-based expert

11 system," and Ricoh's response is the same. *See supra* pp. 15-17. These arguments are even more specious

12 here because the claim makes no references whatsoever to an "expert system," either in connection with a

13 knowledge base or elsewhere. For this additional reason, Defendants' proposed construction should be

14 rejected.

15   **K.   Claim 17 ("generating control paths")**

16   The dispute with regard to claim 17 is essentially the same as that for claim 15, as discussed above.

17 The parties contest whether the "paths" claimed refer to signal lines, as shown in Fig. 1b, or other types of

18 structure or hardware components. For the same reasons given above with respect to claim 15,

19 Defendants' proposed construction of claim 17 is improper.

20 **IV.   CONCLUSION**

21   The Court should adopt Ricoh's proposed constructions of claims 13-17 of the '432 patent.

22 Dated: September 20, 2004   Ricoh Company, Ltd.

23   By: ___ /s/ Gary Hoffman _____

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